



ADVERTISEMENT:

Evaluation of new instrument for the assessment of vascular function (RMP #68)

Adults (21 years and older) are invited to participate in a study to evaluate a new instrument for examining the health of arteries. This instrument is designed to measure both the stiffness of arteries and the strength of the response of these vessels to changes in blood flow. The ultimate goal of this project is to produce a compact, low-cost device which might be used in the future as a part of a routine medical checkup. It may help doctors to detect diseases of the arteries at an early stage. Your participation in this study will allow us to compare the measurements produced by this instrument with established methods of assessing the health of arteries.

Changes in blood flow will be brought about either by your placing 0.6 mg or less of nitroglycerin under your tongue, or by inhaling albuterol with an inhaler, or by means of inflating and deflating a blood pressure cuff. Taking nitroglycerin is a commonplace treatment for chronic angina, the chest pain of heart disease. It works by relaxing the blood vessels to the heart, so the blood flow and oxygen supply to the heart is increased. The regular dose is 0.4 mg. Albuterol is used to prevent and treat shortness of breath caused by asthma, chronic bronchitis and other lung diseases. It works by relaxing and opening air passages in the lungs, making it easier to breathe.

If you are not taking nitroglycerin for this procedure or inhaling albuterol, an uninflated blood pressure cuff will be placed around your upper arm. Your arm will then be extended at chest height and placed in either of 2 devices. The first device will rhythmically tap the artery at your wrist. An electronic stethoscope will be placed on the skin further up your forearm to measure the speed of the blood in your artery. You will now either take nitroglycerin or inhale albuterol, or if you are not taking nitroglycerin or inhaling albuterol, the blood pressure cuff will be inflated for up to 6 minutes. It will then be released. It may be inflated again for periods of up to 1 minute.

The speed of the blood in your artery will be measured again.

For the procedure with the second device, if you are not taking nitroglycerin for this procedure or inhaling albuterol, an uninflated blood pressure cuff will be placed around your upper arm. Once your arm is placed within the second device, a sensor will be placed on your forearm or upper arm. This sensor will

use harmless ultrasound waves to make images of your arteries. You will now either take nitroglycerin or inhale albuterol, or if you are not taking nitroglycerin or inhaling albuterol for this procedure, a blood pressure cuff will be inflated for up to 6 minutes. It will then be released. It may be inflated again for periods of up to 1 minute.

More images of your arteries will be recorded.

Each procedure takes about 40 minutes; you may be asked to participate in up to 3 procedures on one day. You will be given a 30 min break between procedures. You may participate in 10 study days of up to 3 procedures per day. Subjects will be compensated fifty dollars per day.

